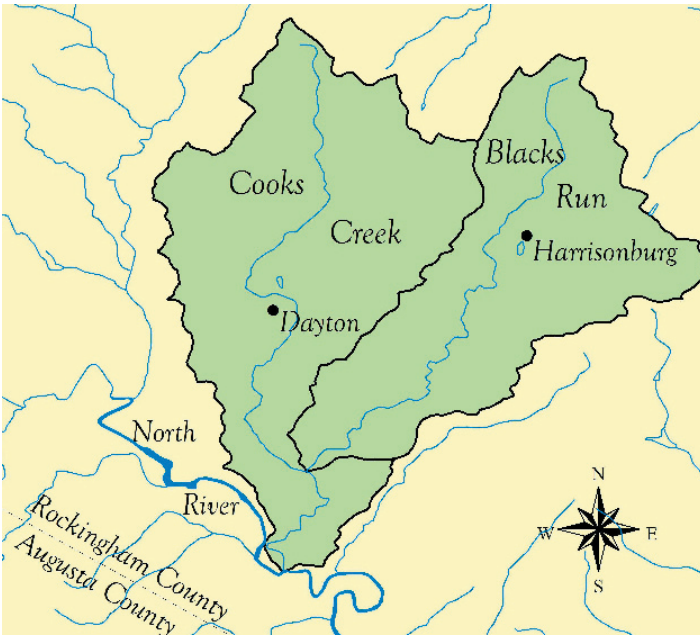


THE BLACKS RUN AND COOKS CREEK CLEAN-UP PLAN



Blacks Run and Cooks Creek watersheds

The Water Quality Study

A water quality study was completed for Cooks Creek and Blacks Run in 2002. This study was conducted after water quality monitoring performed by the Virginia Department of Environmental Quality showed that both Cooks Creek and Blacks Run were violating water quality standards for fecal coliform bacteria and that the benthic community (aquatic organisms such as insects) was impaired in both streams. The study revealed that excess sediment was negatively impacting the benthic community in the two streams, while excess phosphorous was an additional stressor to aquatic life in Cooks Creek. The study set Total Maximum Daily Loads (TMDLs) for bacteria, sediment and phosphorous that if attained would meet water quality standards and support a healthy benthic community. The study also identified the pollutant reductions needed from various sources to meet the goals.

The Pollution Sources



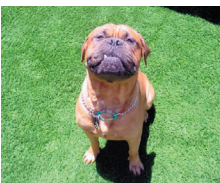
Point sources:

Wastewater treatment plants and other industries may discharge phosphorous (P), bacteria and sediment at or below their permitted levels.



Urban and residential development:

Includes malfunctioning septic systems as well as runoff from paved surfaces and rooftops that can transport pollutants to streams



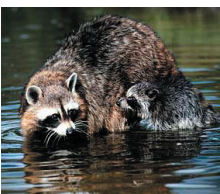
Pets:

Dogs and cats contribute fecal coliform to our streams. When pet waste is left in parks and yards, it is carried to streams through runoff.



Agriculture:

Cattle, horses, sheep, and poultry contribute fecal coliform to our streams. Some farming practices also increase P and sediment in our water.



Wildlife:

Wildlife contribute fecal coliform to our streams through their waste. This is a naturally occurring source of bacteria.

The Clean-Up Plan: Cooks Creek and Blacks Run TMDL Implementation Plan

After the TMDL study was completed, an implementation or clean-up plan was developed to reduce the amount of pollution from each of the identified sources. An essential piece of this process is participation from stakeholders. The following groups and agencies have been involved with the Cooks Creek and Blacks Run clean-up plan: The Shenandoah Valley Conservation District (SVCD), The City of Harrisonburg, Rockingham County, James Madison University, Canaan Valley Institute, Friends of Blacks Run Greenway, Rockingham County Farm Bureau, Natural Resource Conservation Service, Virginia Departments of Health, Transportation, Conservation and Recreation (DCR), and Environmental Quality (DEQ). All the groups involved worked together to identify best management practices (BMPs), which are conservation measures to improve soil and water quality, to include in the plan. Some examples of BMPs include silt fences on construction sites to prevent erosion, crop rotation to preserve soil integrity, and maintaining septic systems so they remove nutrients and bacteria efficiently. A bi-monthly monitoring program is included in this plan, which DEQ will use to assess progress in implementing the plan and to determine whether its goals are achieved. The SVCD will work with local stakeholders to implement the clean-up plan.

Best Management Practices

The following Best Management Practices (BMPs) were selected for the Clean-Up Plan for Cooks Creek and Blacks Run by urban, residential and agricultural working groups and a representative steering committee. The BMPs have been separated into three categories; however, many practices are interchangeable between the categories. Implementation goals were established for each of the practices listed below. Financial assistance is available for BMP installation through the Virginia State Cost Share Program. Progress will be assessed by regular monitoring by DEQ and citizen programs. Based on progress at the end of 5 years, it will be determined whether additional implementation efforts are necessary to meet the Clean-up Plan goals.



Exclusion fencing and streamside buffer

Agricultural Best Management Practices

Grazing Land and Stream Protection Systems: Establish streamside fencing and buffers to trap pollutants

Waste Storage: Facilities to store waste from poultry and livestock

Improved Pasture Management: Includes rotational grazing systems, soil testing, nutrient management and improving forage species

Conservation Tillage: Plant crops with minimal soil disturbance and maintain cover crops or crop residue

Nutrient Management Plans: Guidance to apply fertilizer based on soil chemistry and plant nutrient requirements in rural and urban areas



Septic system pump-out

Residential Best Management Practices

Rain Gardens: Gardens designed to collect and filter water and reduce the amount of pollutants carried to streams in stormwater

Bioretention filters: Used to treat surface runoff from paved surfaces allowing infiltration and retention of pollutants by native plants and soil

Septic System Maintenance, Repair and Replacement: Includes septic system pump-outs, repair or replacement of failing systems, and installation of alternative systems where conventional systems are not appropriate



Bioretention filter

Urban Best Management Practices

Stream Buffers and Stabilization: Establish trees and shrubs along streams to filter nutrients, sediment and bacteria; use natural stream channel design to stabilize stream banks in urban and residential areas

Erosion and Sediment Control: Control sediment and prevent erosion when disturbing land

Retention Ponds: Depression areas allow water to infiltrate into the ground at a more natural rate and decrease pollutants entering streams

Street-Sweeping: Enhance city street sweeping program to collect sediment that would otherwise be carried to streams via storm drains

For more information contact:

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What you can do!

- Learn about financial incentives available to install Best Management Practices
- Implement Best Management Practices on your property
- Get involved with local civic groups and watershed organizations
- Give a copy of this fact sheet to your neighbor